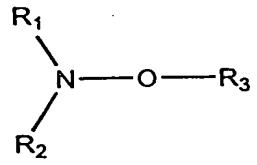
We claim:

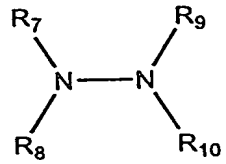
1. An etching residue remover, comprising

(a) from about 5 to about 50 % by weight of at least one nucleophilic amine compound having oxidation and reduction potentials selected from the group consisting of compounds of formula I and salts thereof,



wherein R_1, R_2, and R_3 are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group, or salts or derivatives thereof; wherein at least one of R_1, R_2, and R_3 is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl groups, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof; and

compounds of formula II and salts thereof,

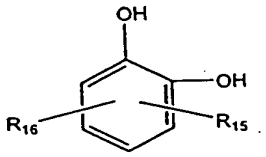


wherein R_7, R_8, R_9, and R_{10} are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group; wherein at least

one of R_7, R_8, R_9, and R_{10} is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl group, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof;

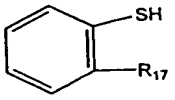
(b) from about 10 to about 80 % by weight of at least one alkanolamine which is miscible with the at least one nucleophilic amine compound;

(c) an effective amount of up to about 30% by weight of at least one compound selected from the group consisting of a compound of formula III,



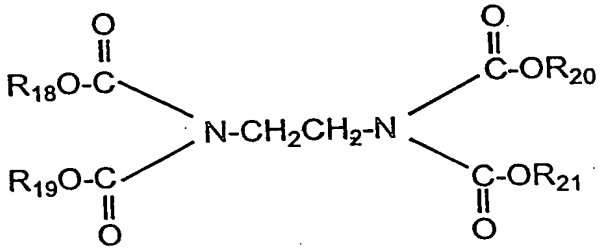
wherein R_{15} and R_{16} is H, t-butyl, OH or COOH;

a compound of formula IV,



wherein R_{17} is OH or COOH;

an ethylene diamine tetracarboxylic acid of formula V,



wherein R_{18}, R_{19}, R_{20} and R_{21} is H, NH_4 or an ammonium salt thereof; and

an alkyl ammonium hydroxide of formula VI,

$R_{11}R_{12}R_{13}R_{14}NOH$

wherein R_{11}, R_{12}, R_{13} and R_{14} are each, independently, a short chain alkyl group having from 1 to 5 carbon atoms; and

(d) a balance of water, wherein the at least one nucleophilic amine compound, the at least one alkanolamine and the at least one compound are present in sufficient amounts to remove etching residue from a substrate.

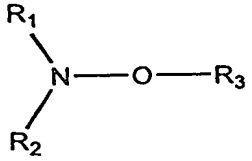
2. The etching residue remover according to claim 1, wherein the at least one alkanolamine has an alkanol group containing from 1 to 5 carbon atoms.

3. The etching residue remover according to claim 1, wherein the at least one alkanolamine is selected from the group consisting essentially of monoamines, diamines, and triamines.

4. The etching residue remover according to claim 1, wherein the at least one alkanolamine has the formula $R_{22}R_{23}$-N-CH_2CH_2-O-CH_2CH_2OH wherein R_{22}, and R_{23} is H, CH_3, CH_3CH_2 or CH_2CH_2OH.

5. An etching residue remover, comprising

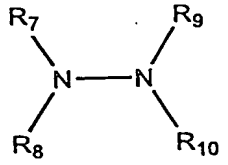
(a) from about 5 to about 50 % by weight of at least one nucleophilic amine compound having oxidation and reduction potentials selected from the group consisting of compounds of formula I and salts thereof,



wherein R_1, R_2, and R_3 are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group, or salts or derivatives thereof; wherein

at least one of R_1, R_2, and R_3 is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl groups, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof; and

compounds of formula II and salts thereof,



wherein R_7, R_8, R_9, and R_{10} are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group; wherein at least one of R_7, R_8, R_9, and R_{10} is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl group, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof;

(b) from about 10 to about 80 % by weight of at least one alkanolamine which is miscible with the at least one nucleophilic amine compound; and

(c) a balance of water, wherein the at least one nucleophilic amine compound and the at least one alkanolamine are present in sufficient amounts to remove etching residue from a substrate.

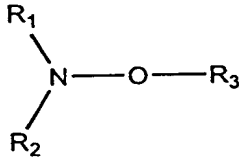
6. The etching residue remover according to claim 5, wherein the at least one alkanolamine has an alkanol group containing from 1 to 5 carbon atoms.

7. The etching residue remover according to claim 5, wherein the at least one alkanolamine is selected from the group consisting essentially of monoamines, diamines, and triamines.

8. The etching residue remover according to claim 5, wherein the at least one alkanolamine has the formula $R_{22}R_{23}$-N-CH_2CH_2-O-CH_2CH_2OH wherein R_{22}, and R_{23} is H, CH_3, CH_3CH_2 or CH_2CH_2OH.

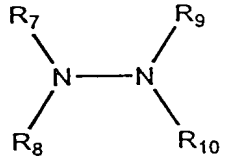
9. An etching residue remover, comprising

(a) from about 5 to about 50 % by weight of at least one nucleophilic amine compound having oxidation and reduction potentials selected from the group consisting of compounds of formula I and salts thereof,



wherein R_1, R_2, and R_3 are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group, or salts or derivatives thereof; wherein at least one of R_1, R_2, and R_3 is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl groups, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof; and

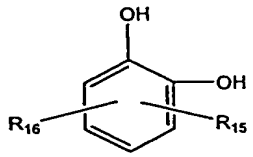
compounds of formula II and salts thereof,



wherein R_7, R_8, R_9, and R_{10} are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group; wherein at least one of R_7, R_8, R_9, and R_{10} is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl group, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof;

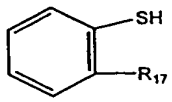
(b) from about 10 to about 80% by weight of at least one organic solvent which is miscible with the at least one nucleophilic amine compound;

(c) an effective amount of up to about 30% by weight of at least one compound selected from the group consisting of a compound of formula III,



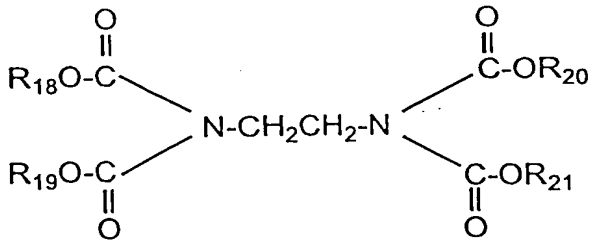
wherein R_{15} and R_{16} is H, t-butyl, OH or COOH;

a compound of formula IV,



wherein R_{17} is OH or COOH;

an ethylene diamine tetracarboxylic acid of formula V,



wherein R_{18}, R_{19}, R_{20} and R_{21} is H, NH_4 or an ammonium salt thereof; and

an alkyl ammonium hydroxide of formula VI,

$$R_{11}R_{12}R_{13}R_{14}NOH$$

wherein R_{11}, R_{12}, R_{13} and R_{14} are each, independently, a short chain alkyl group having from 1 to 5 carbon atoms; and

(d) a balance of water, wherein the at least one nucleophilic amine compound, the at least one organic solvent, and the at least one compound are present in sufficient amounts to remove etching residue from a substrate, and wherein the nucleophilic amine compound is different from the organic solvent.

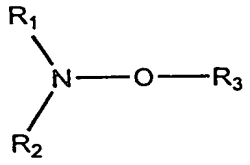
10. The etching residue remover according to claim 9, wherein the at least one compound selected from the group consisting of compounds of formula III, formula IV, formula V, and formula VI is a dihydroxybenzene or a derivative thereof.

11. The etching residue remover according to claim 9, wherein the at least one compound selected from the group consisting of compounds of formula III, formula IV, formula V, and formula VI is an alkyl ammonium hydroxide of a formula $R_{11}R_{12}R_{13}R_{14}NOH$ wherein R_{11}, R_{12}, R_{13} and R_{14} are each, independently, a short chain alkyl group having from 1 to 5 carbon atoms.

12. The etching residue remover according to claim 9, wherein the at least one organic solvent is an alkanolamine.

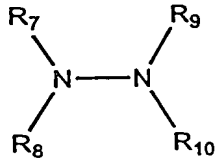
13. An etching residue remover, comprising

(a) from about 5 to about 50 % by weight of at least one nucleophilic amine compound having oxidation and reduction potentials selected from the group consisting of compounds of formula I and salts thereof,



wherein R_1, R_2, and R_3 are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group, carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group, or salts or derivatives thereof; wherein at least one of R_1, R_2, and R_3 is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl groups, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof; and

compounds of formula II and salts thereof,



wherein R_7, R_8, R_9, and R_{10} are independently hydrogen, a hydroxyl group, a substituted C_1-C_6 straight, branched or cyclo alkyl, alkenyl, or alkynyl group, a substituted acyl group, straight or branched alkoxy group, amidyl group,

carboxyl group, alkoxyalkyl group, alkylamino group, alkylsulfonyl group, or sulfonic acid group; wherein at least one of R_7, R_8, R_9, and R_{10} is selected from the group consisting of a hydroxyl group, substituted C_1-C_6 straight, branched, and cyclo alkyl, alkenyl, and alkynyl group, substituted acyl groups, straight and branched alkoxy groups, amidyl groups, carboxyl groups, alkoxyalkyl groups, alkylamino groups, alkylsulfonyl groups, sulfonic acid groups, and salts and derivatives thereof;

(b) from about 10 to about 80% by weight of at least one organic solvent which is miscible with the at least one nucleophilic amine compound; and

(c) a balance of water, wherein the at least one nucleophilic amine compound and the at least one organic solvent are present in sufficient amounts to remove etching residue from a substrate, and wherein the nucleophilic amine compound is different from the organic solvent.

14. The etching residue remover according to claim 13, wherein the at least one nucleophilic amine compound is maintained separate from the at least one organic solvent until the resist and etching residue remover is to be utilized for removing a resist or etching residue from a substrate.

15. The etching residue remover according to claim 13, wherein the at least one organic solvent is an alkanolamine.

16. The etching residue remover according to claim 15, wherein the alkanolamine has at least one alkanol group containing from 1 to 5 carbon atoms.

17. The etching residue remover according to claim 15, wherein the alkanolamine is selected from the group

consisting essentially of monoamines, diamines, and triamines.

18. The etching residue remover according to claim 15, wherein the alkanolamine has the formula $R_{22}R_{23}$-N-CH_2CH_2-O-R_3 wherein R_{22} and R_{23} is H, CH_3, CH_3CH_2 or CH_2CH_2OH, and R_3 is CH_2CH_2OH.

19. The etching residue remover according to claim 15, wherein the alkanolamine is an amino alkoxy alkanol.